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ABSTRACT

Intended to assist school boards in planning educational facilities for trainable mentally retarded children, the booklet contains designs illustrating both the general structure and specific room arrangements for various sizes of school and various age groups. The designs show small, self-contained schools where mobility in the grouping of classes and flexibility in the arrangement of training facilities can be achieved easily. In addition to building layout and classroom arrangement, suggestions are made concerning bathrooms, playroom, kitchen, craft room, principal's office, and staff and health room. Discussion of the playground area covers both the planning of outdoor areas and specific types of recommended playground equipment. (KW)

ED 058688

special education facilities

schools and playgrounds for trainable mentally handicapped children

EC 041 013

Ontario Department
of Education

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preface

This brochure is designed to assist divisional school boards in planning educational facilities for trainable mentally handicapped children.

The content of the outline is the result of many years of experience in planning programs for the trainable mentally handicapped children in the Province of Ontario and is a longitudinal study of various school facilities in order to provide the best and the most suitable learning environment for children with exceptional needs.

The designs illustrate the facilities in general structure as well as in specific arrangements, and are practical in nature.

introduction

The present trend in education for trainable mentally handicapped children is toward educational programs in the community through the establishment of day schools. This trend has emerged from the desire of parents of mentally handicapped children to care for them at home instead of placing them in hospital schools. The number of trainable mentally handicapped children in day schools has increased. Accommodation is required not merely to house them comfortably but also to provide an educational program suitable to their limited intellectual abilities and needs.

In planning educational programs for these children, it has been recognized that the physical school environment is of the utmost importance. It is necessary to create meaningful learning conditions for the many extreme individual differences in order to facilitate growth and development.

A new concept of school design for the trainable mentally handicapped has emerged, based on the specific needs of the children and on the new approach to teaching. This approach emphasizes individualized training, active participation in daily programs, and the purposeful use of school facilities for the development of practical skills for everyday life.

The new school design has a home-like setting which helps the trainable mentally handicapped child to learn functional skills and encourages him to participate socially with his classmates. This motivating environment can be obtained only in a small, self-contained school, where mobility in the grouping of classes and flexibility in the arrangement of training facilities can be easily achieved.

Suggested plans for school buildings

If a school board is contemplating building a school for mentally handicapped children or adding rooms to an existing school building, a survey should be made to determine the possible enrolment and the number of rooms required.

It is important that school boards take into consideration the particular site, transportation of pupils, and other local factors which could influence the size of the school and its location.

Schools should be situated within the community so as to become a part of the community life and to be able to utilize its local services.

The site should be large enough for a suitably planned playground. Consideration should also be given to future expansion needs.

The school building and its surroundings should be designed to provide a learning environment which stimulates the mentally handicapped child and encourages interaction between him and his environment.

Self-contained school buildings for trainable mentally handicapped children are more effective in densely populated areas. The building should contain:

- Classrooms
- Playroom (gymnasium)
- Washrooms
- Kitchen
- Crafts room
- Health room
- Teachers' room, or
- Health and teachers' room (combined)
- Principal's office and parents' interview room
- Storage room

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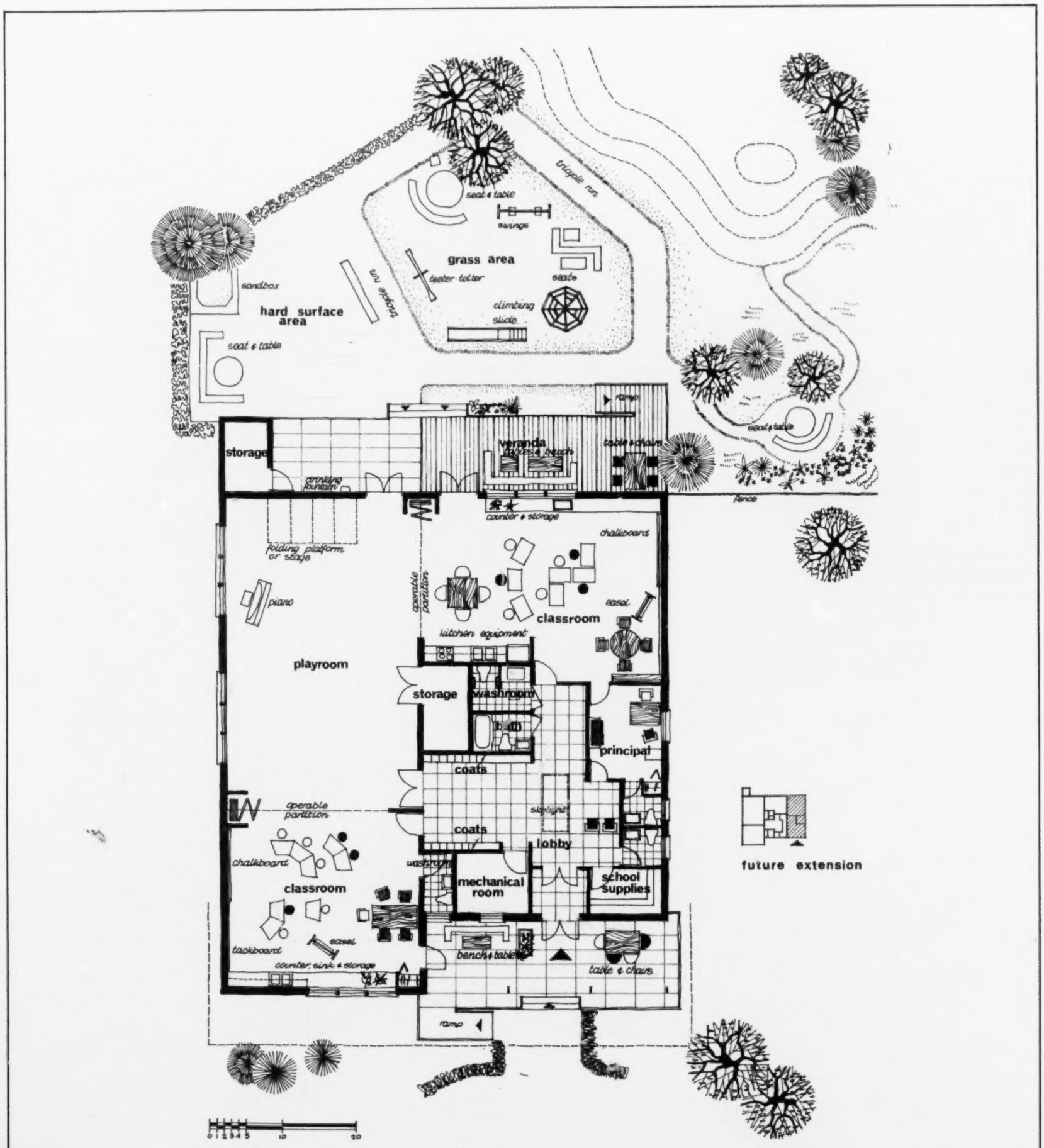
planning study for
a 2 classroom school



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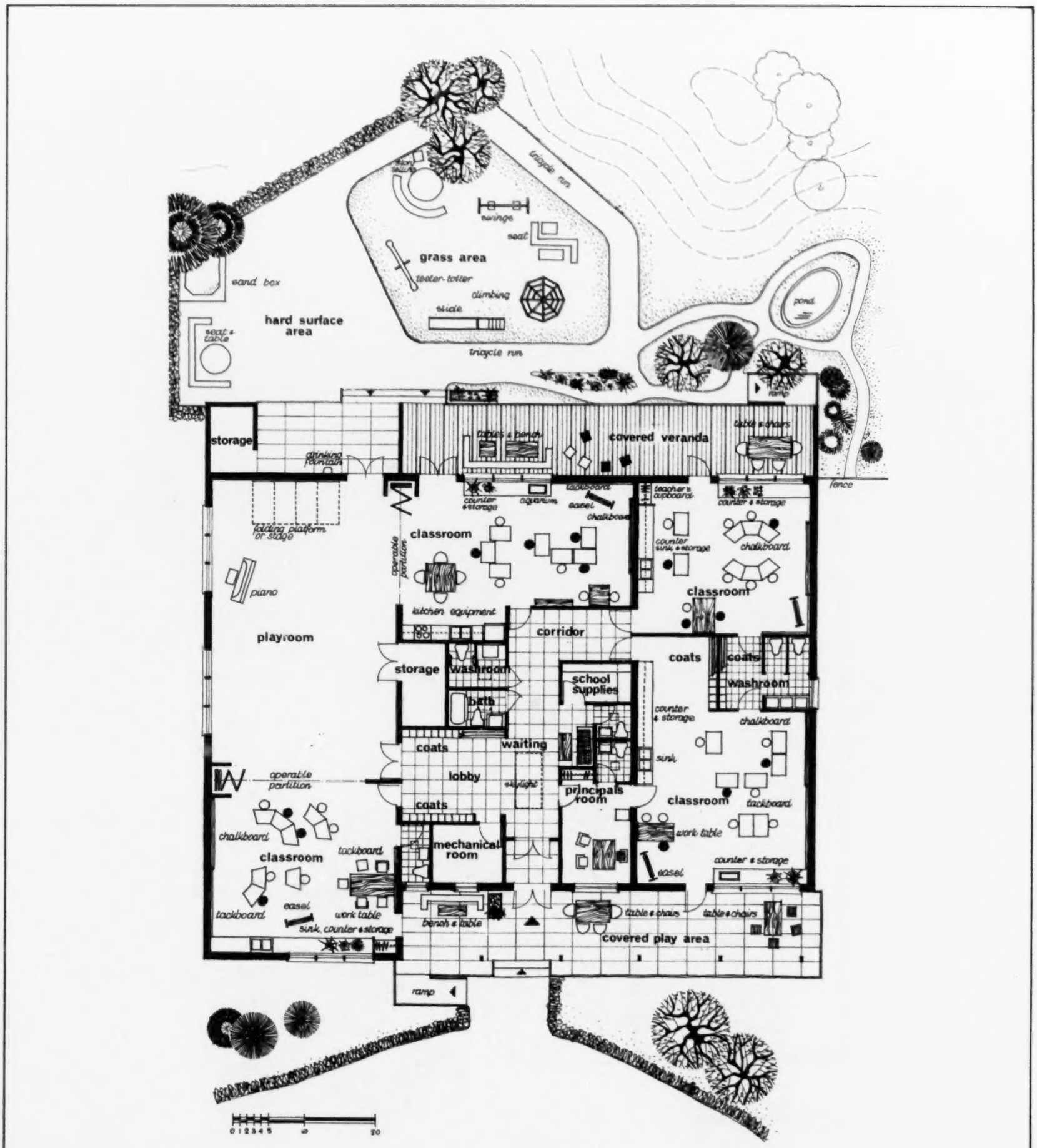
a 4 classroom school



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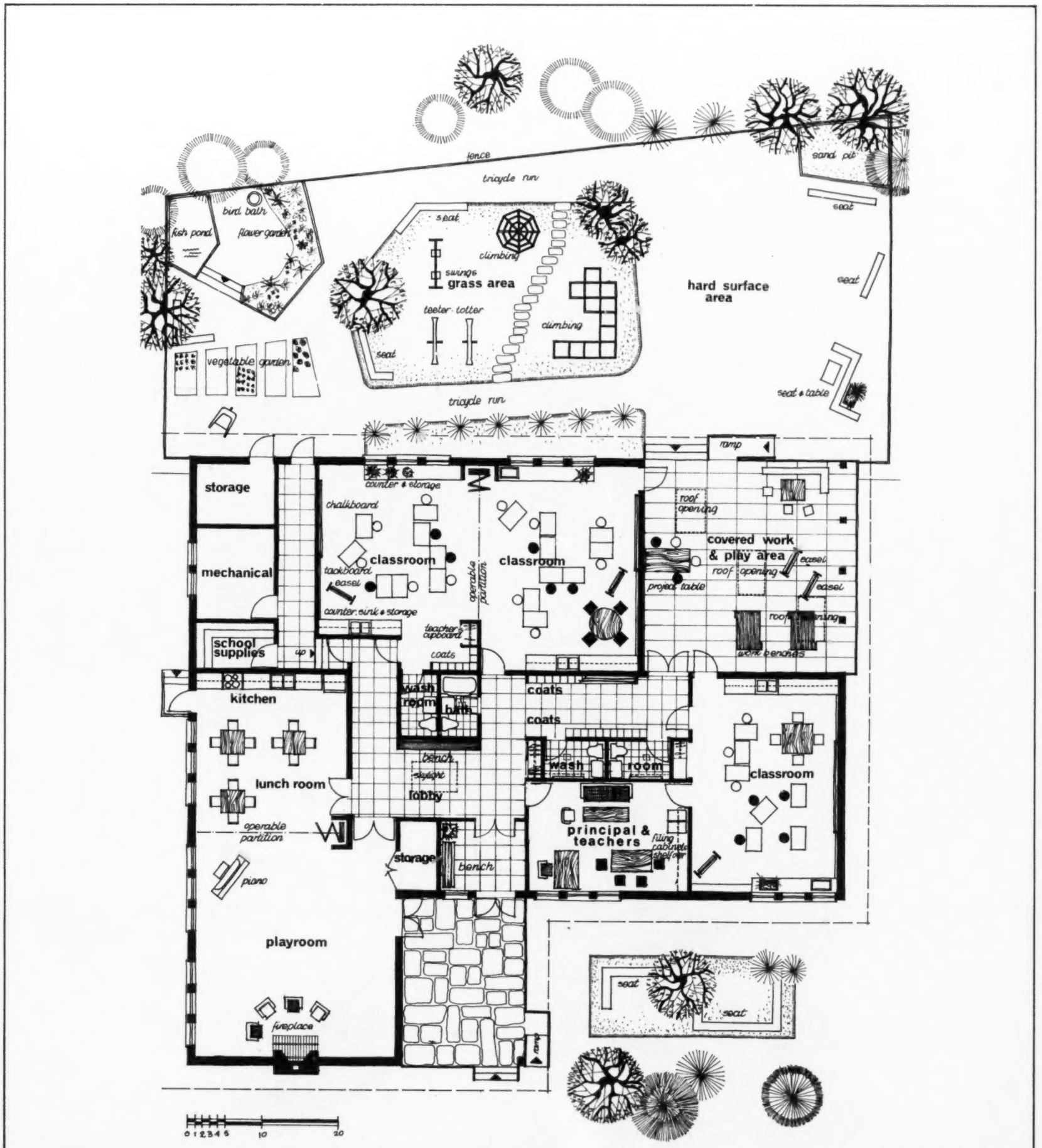


Suggested plan for
school buildings—continued from p. 5

For efficient operation and planning of suitable individual and group programs, 85-100 pupils should be the maximum enrolment.

A complete new unit of rooms or a wing specially designed for trainable mentally handicapped children and attached to an elementary school can also be taken into consideration in the general school building program.

In areas where the trainable mentally handicapped population varies from one community to another and the number of pupils is small, classrooms in regular elementary schools can be used. These rooms, however, must be suitably adjusted and equipped to accommodate the needs of the children.

Recent studies, however, tend to indicate that self-contained school buildings, specially designed for trainable mentally handicapped, provide better learning situations for pupil adjustment to everyday life at home and in the community, than do classes housed in regular elementary schools.

In rural areas where the trainable mentally handicapped children constitute a scattered school age population, it might be helpful to plan future school buildings in the form of a regional school.

It would, therefore, be advisable for school boards to investigate all local possibilities before entering into any building program.

One advantage of planning flexible programs in a home-like setting is that it creates a natural learning atmosphere; children experience freedom of movement within the school, taking on as much responsibility as they can handle, thus reducing the need for adult help and constant supervision. But the main advantage is that trainable mentally handicapped children are much happier with children at their own level and in their own school.

General suggestions

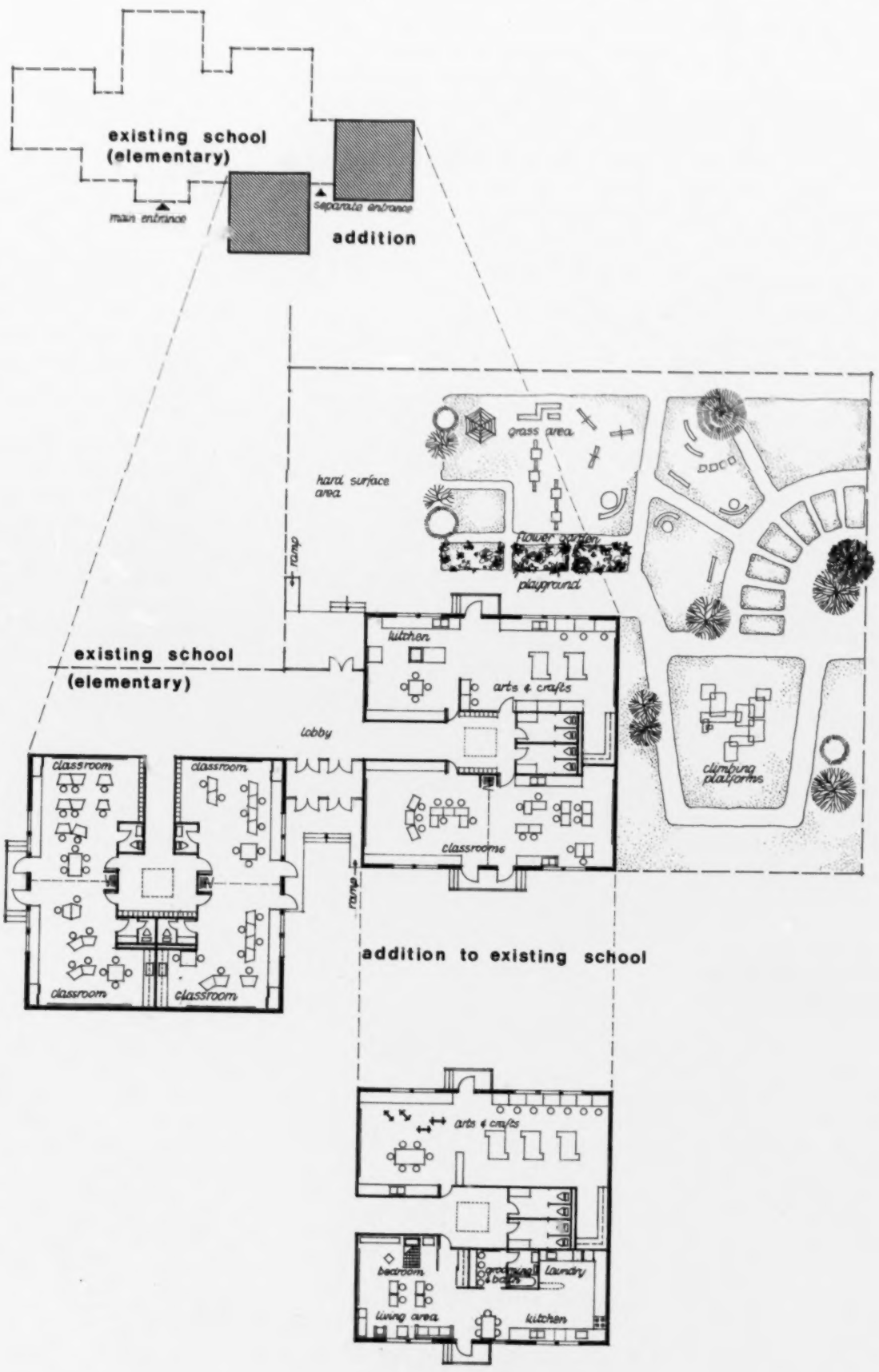
Schools for handicapped children require special mechanical systems to provide healthy conditions. Greater concern for standards of health and cleanliness as well as strict standards for safety are most important.

The need for better illumination and good acoustics in the classrooms as well as adequate air flow are a main concern. Good ventilation is especially important since mongoloid children suffer from respiratory conditions and need fresh dry air for health reasons. It is clear that heating and ventilating systems are essential factors in these schools.

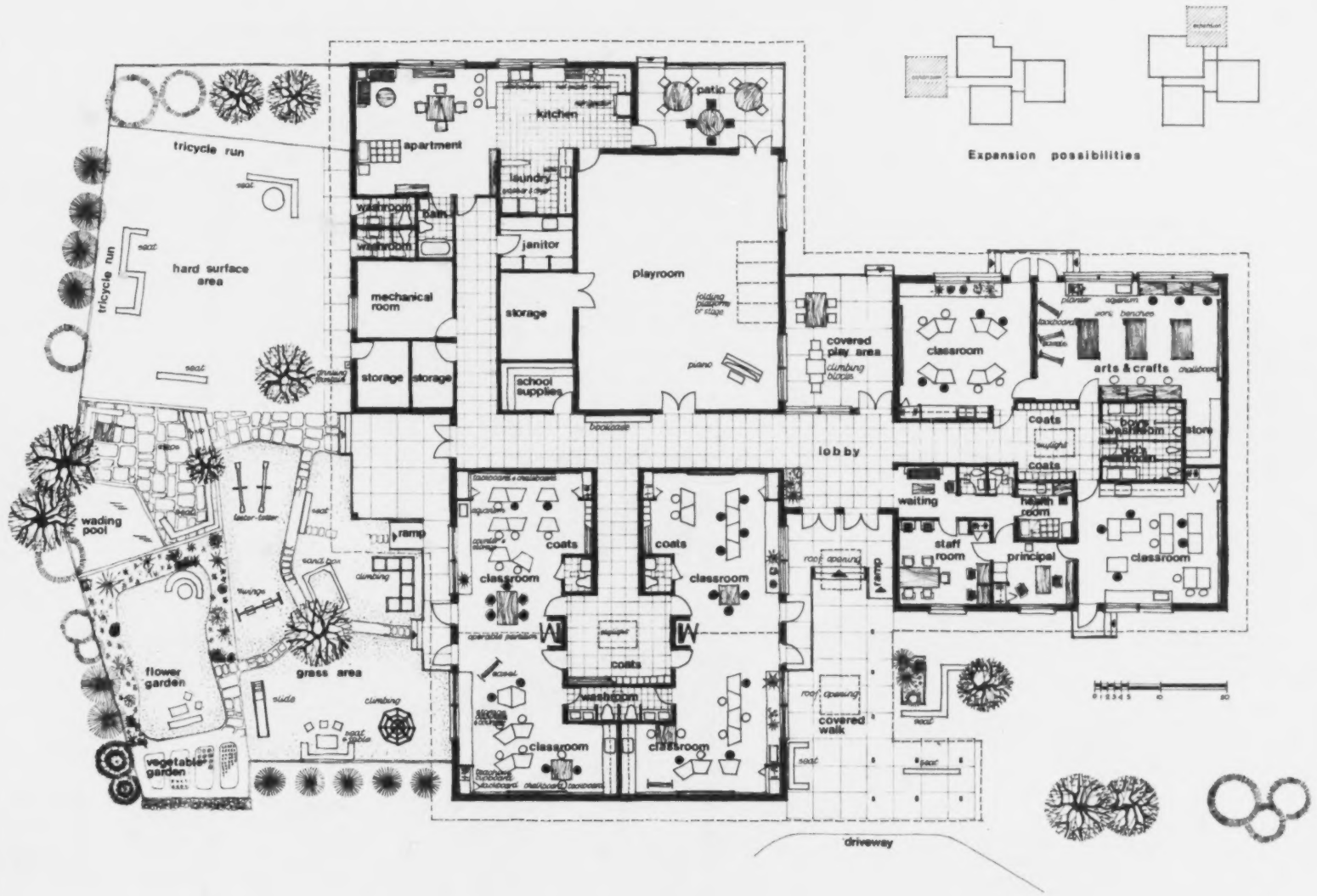
The first and perhaps the most important element in the school building for mentally handicapped children is the number of exit doors. Provisions must be made to ensure that the pupils can leave quickly and safely. Fire prevention standards must be emphasized as the mentally handicapped children suffer also from many physical handicaps and their reaction to certain unexpected situations is unpredictable.

Health and safety conditions should be particularly observed in instances where mentally handicapped children are situated in elementary school classrooms.

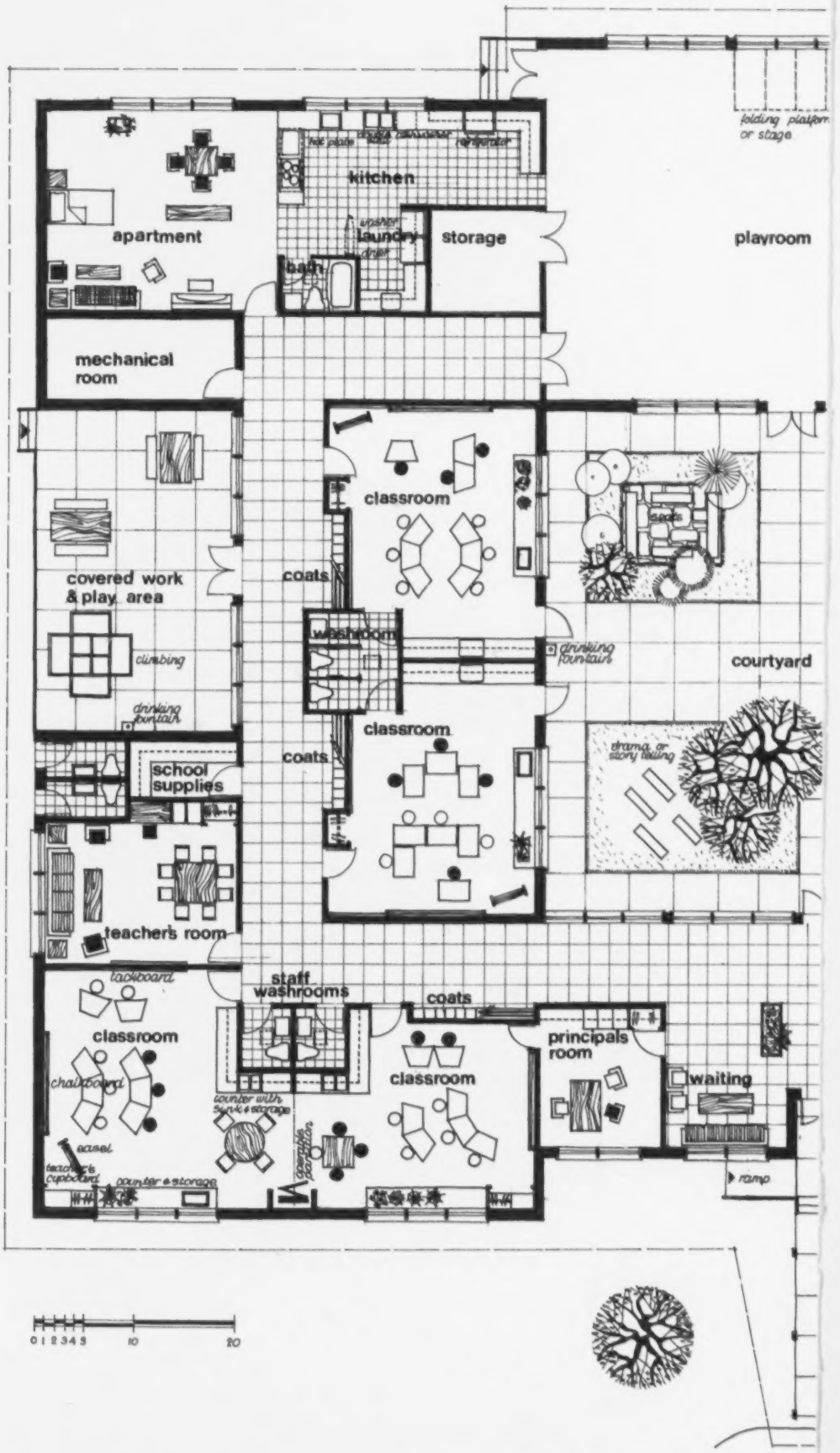
planning study for a wing specially designed for trainable mentally handicapped children and attached to an elementary school

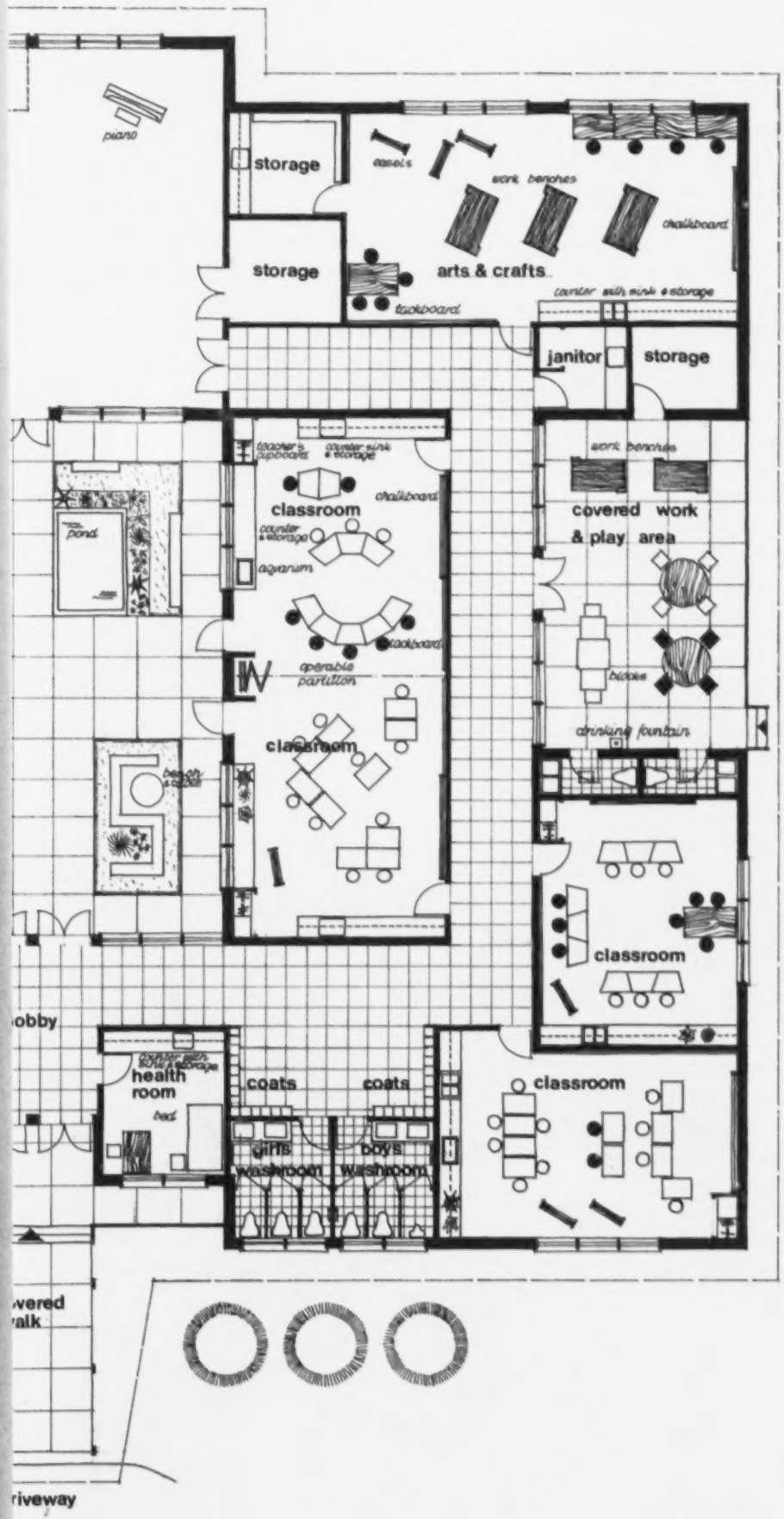


planning study for
a 6 classroom school



planning study for an 8 classroom school




piano
storage
easels
work benches
chalkboard
storage
arts & crafts
counter with sink & storage
tackboard
janitor
storage
teacher's cupboard
counter sink & storage
work benches
classroom
chalkboard
counter & storage
covered work & play area
pond
aquarium
tackboard
operable partition
bikes
classroom
drinking fountain
classroom
obby
health room
bed
coats
coats
classroom
girls washroom
boys washroom
vered walk
riveway

The classroom

A classroom for trainable mentally handicapped children is not merely a room where a group of pupils is placed for a period of time. It is an environment which provides the background for learning in group and individual settings. The various classroom arrangements should become a challenge for each child. Equipment and space must be designed to develop the child's potential to its fullest.

Capacity
Although the number of pupils in each class will vary, each classroom should be able to accommodate comfortably approximately 10-12 pupils.

Size
An area of approximately 40-50 square feet per pupil is recommended for each classroom. This size allows adequate space for free movement yet avoids large empty areas which could encourage aimless running, noise or antisocial behaviour, and which require constant teacher control. In the planning of space, consideration should be given to the physical size of pupils.

Self-contained classrooms
It is advisable to plan self-contained classrooms for junior classes with attached washroom and cloakroom facilities for easier supervision by the teacher. For older pupils, self-contained classrooms are not advisable. Washrooms should be outside the classroom to assist in training in personal routine, and to provide experience in the use of public washroom facilities.

Classrooms in regular elementary schools
When pupils are located in classrooms in a regular elementary school, movable dividers or movable partitions can be used to isolate areas for specific activities, e.g. play, crafts or kitchen areas. Each area should be suitably equipped for training purposes. Movable dividers are recommended as they can be easily adjusted or removed if more space is needed for large group activities.

Cupboards
A set of low cupboards should be placed along one wall with sliding doors, for educational equipment and teaching material. Shelves or cupboards with plastic laminate tops can be incorporated with the heating units to provide a continuous surface below the windows. Movable cupboards on casters can hold large blocks and toys, and can also be used as dividers.

Double sink
Hot and cold water should be installed with ample counter space and cupboards below. Consideration should be given to the size of pupils for carrying out such duties as cleaning up, washing paint brushes, watering plants and other activities. The sink should be lower and wider for younger pupils to provide an opportunity for water play and for cleaning up.

Tackboards
A large tackboard adjusted to the pupil's size should be provided. It should be one foot above ground for younger pupils and slanted slightly to allow children to arrange their own art and work displays.

Chalkboards
Chalkboard rails should be set one foot from the floor to permit use of the large surface for individual activities in eye-hand coordination and sensory-motor training.

Cloakroom facilities
Each classroom should have its own cloak facilities. Pegs for children's clothing should be placed low for easy reach. Ventilation should be provided in the cloakroom cupboards. In some schools, movable coat racks are used in corridors and low benches provided for children to sit comfortably while removing shoes and attending to their self-care training. Safety rules should be respected when planning these facilities.
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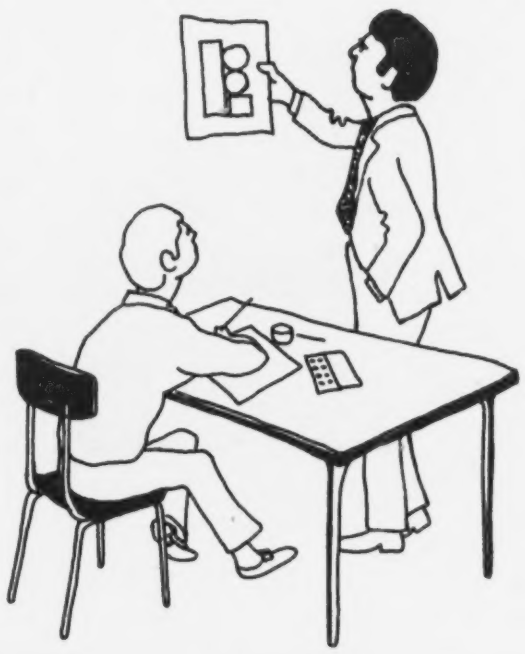
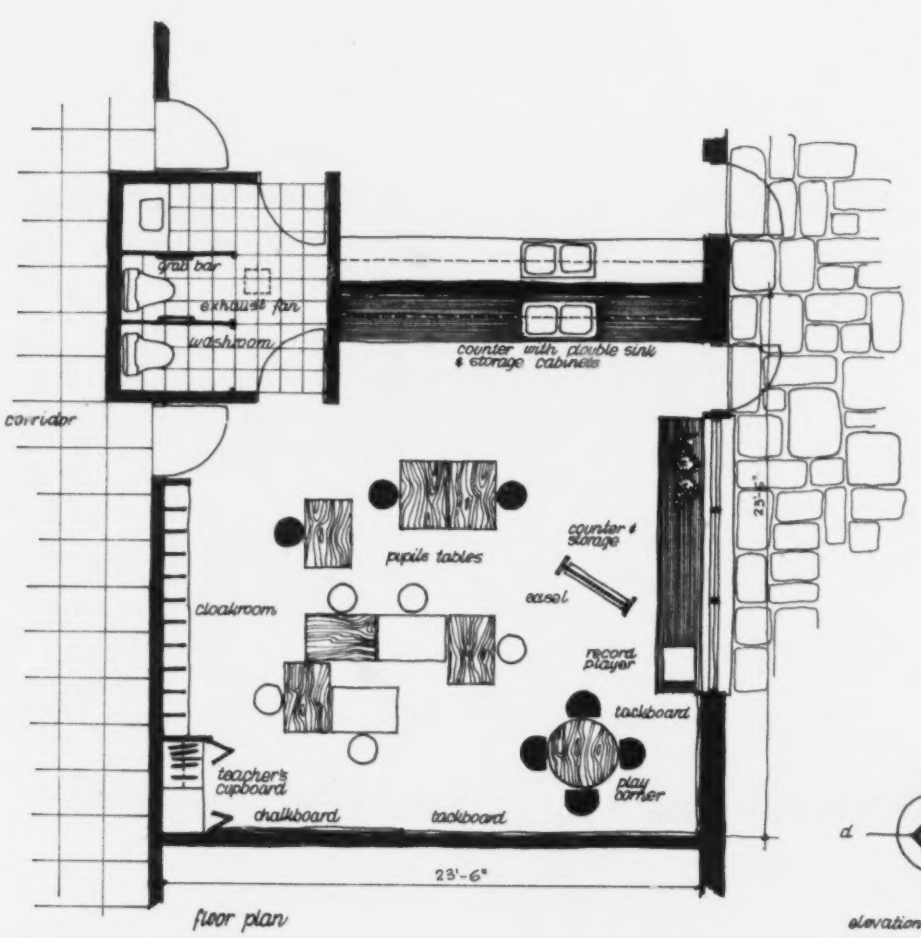
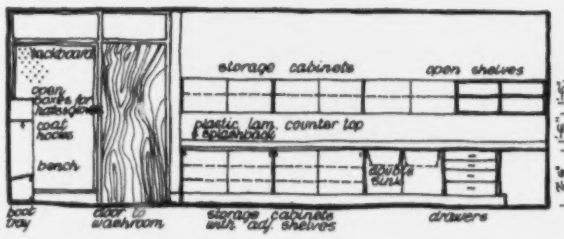


classroom arrangement for junior age groups 5-9 years



floor plan

elevation orientation



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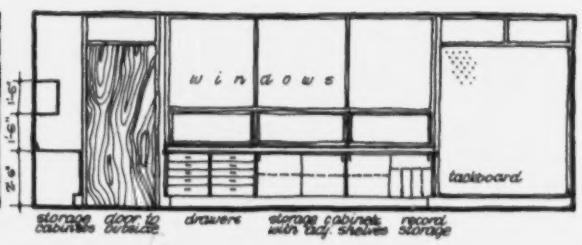

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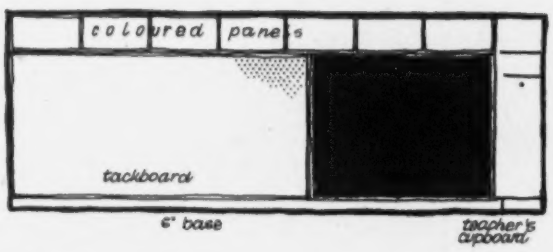

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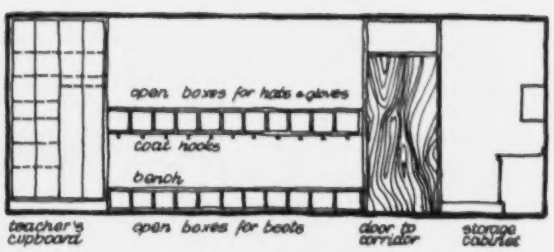

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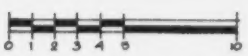

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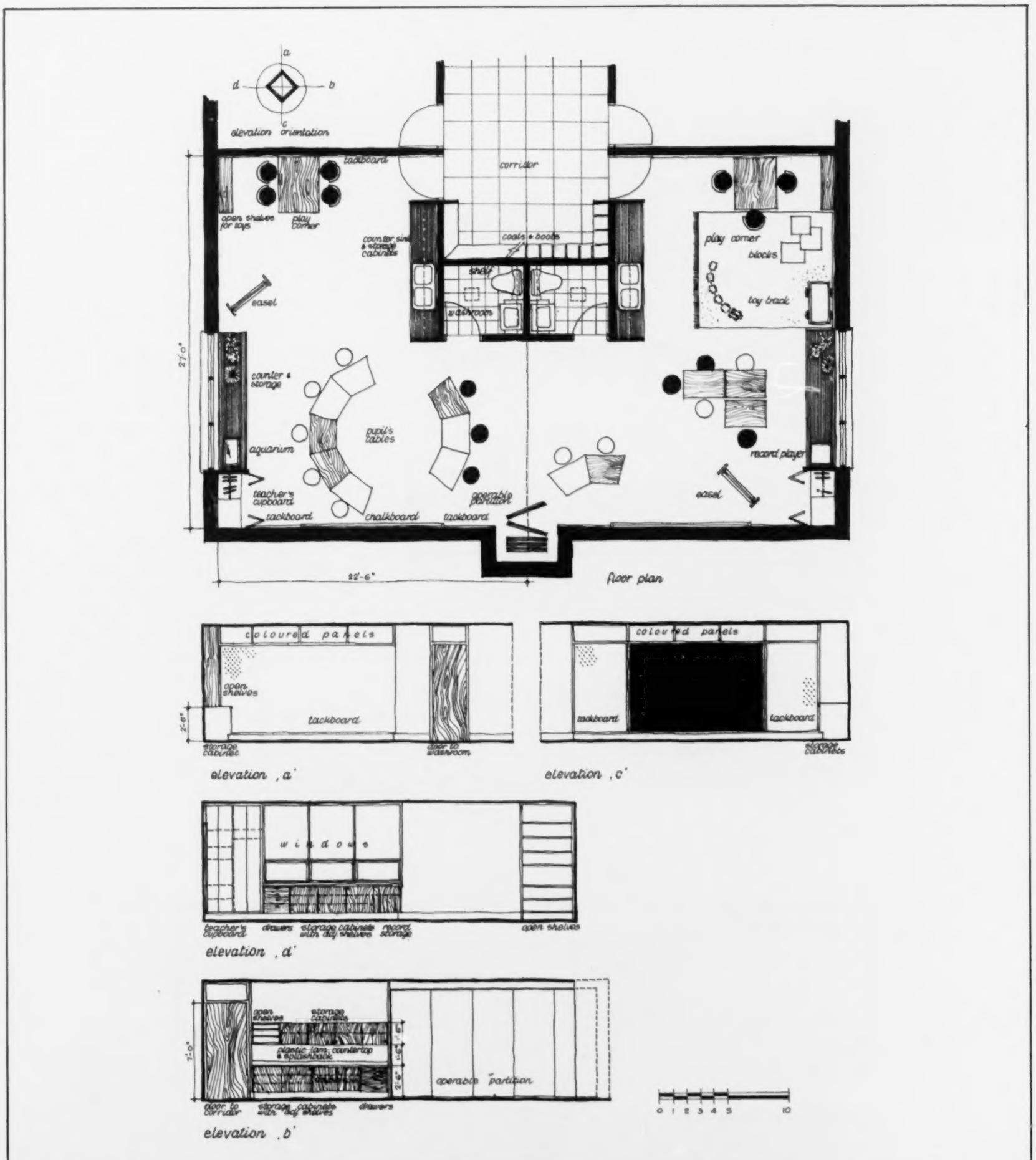


The classroom—
continued from p. 13

Classroom furniture
Since less time is spent at formal work, and more in active participation and movement, furniture should lend itself to a variety of arrangements. Movable furniture built to the size of pupils and easy for them to carry is suggested. Since open space and free movement are essential, all equipment should be light but sturdy.

Tables
Tables of rectangular, circular or trapezoid shape are preferred to desks. These can be easily arranged to provide larger work areas for particular projects and group work for socialization.

Desks
Two or three individual desks should be available in case some children need to work in isolation, e.g. brain-damaged or hyperactive children. For children with orthopaedic problems there are specially designed trays which can be more easily attached to individual desks or wheel chairs than to tables.

Chairs
Detached, easily stacked chairs conserve floor space. The best type is wood-composite or plastic.

Teacher's desk
A small desk should be sufficient. The teacher in a school for mentally handicapped children has a different function from that of a regular classroom teacher. He works directly with individual children in different classroom areas. Therefore, his desk is not as essential. Working space for the teacher should be provided in the staff room. A large table will allow him to spread his work and also make it possible for the staff to work together.

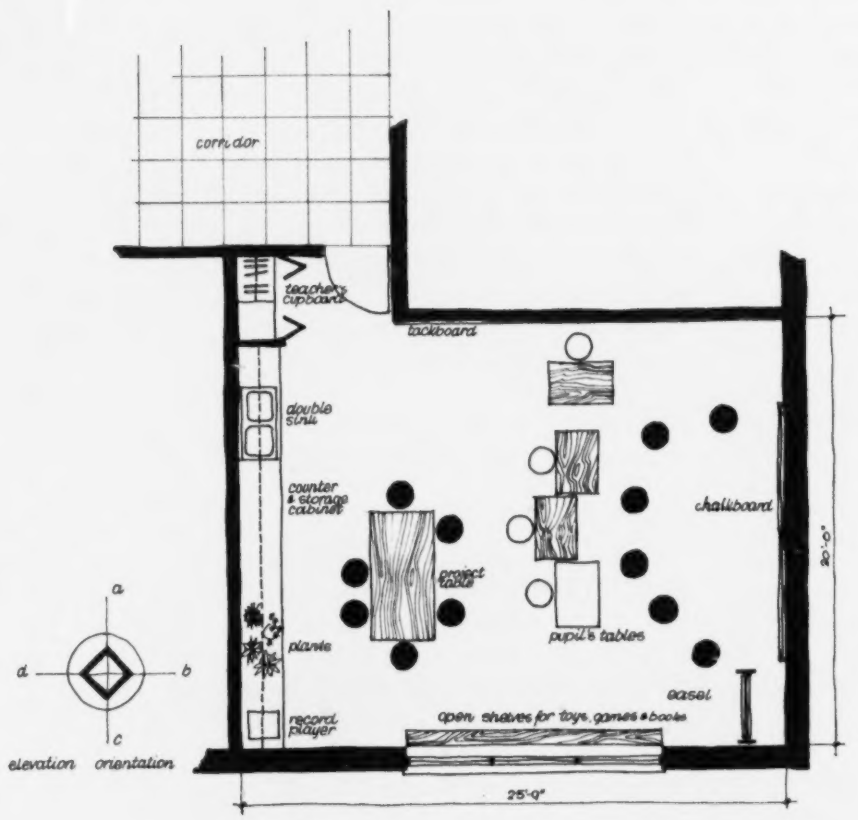
Teacher's chair
A chair with casters is recommended.

Educational equipment
There should be commercial and teacher-made teaching aids, such as sensory-visual, sensory-motor materials and a number of educational toys and games. Some of these should be set on open shelves daily, and returned by the students to cupboards after use. This provides training in tidying tasks.

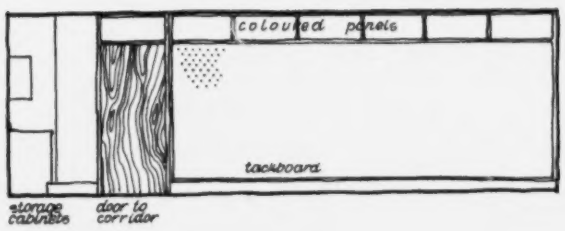
Easel
Easels for painting should be placed in one corner, away from classroom traffic, while another easel with pegboard on one side and flannel board on the other can be used for different activities, such as speech training through the use of pictures or flannel shapes.

Record player
A four-speed record player with good tone quality and a set of records suitable for different age levels should be placed in each classroom.

classroom arrangement for intermediate age group 10-14 years



floor plan



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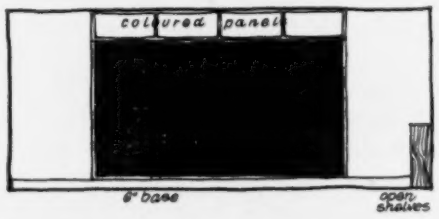

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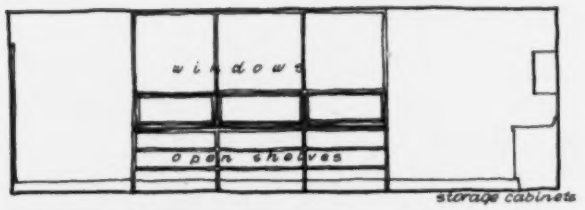

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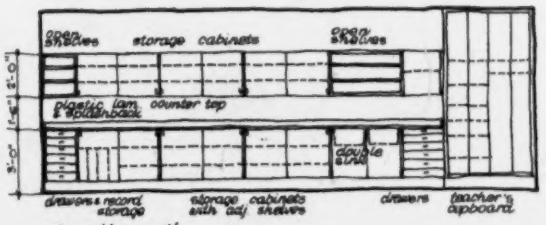

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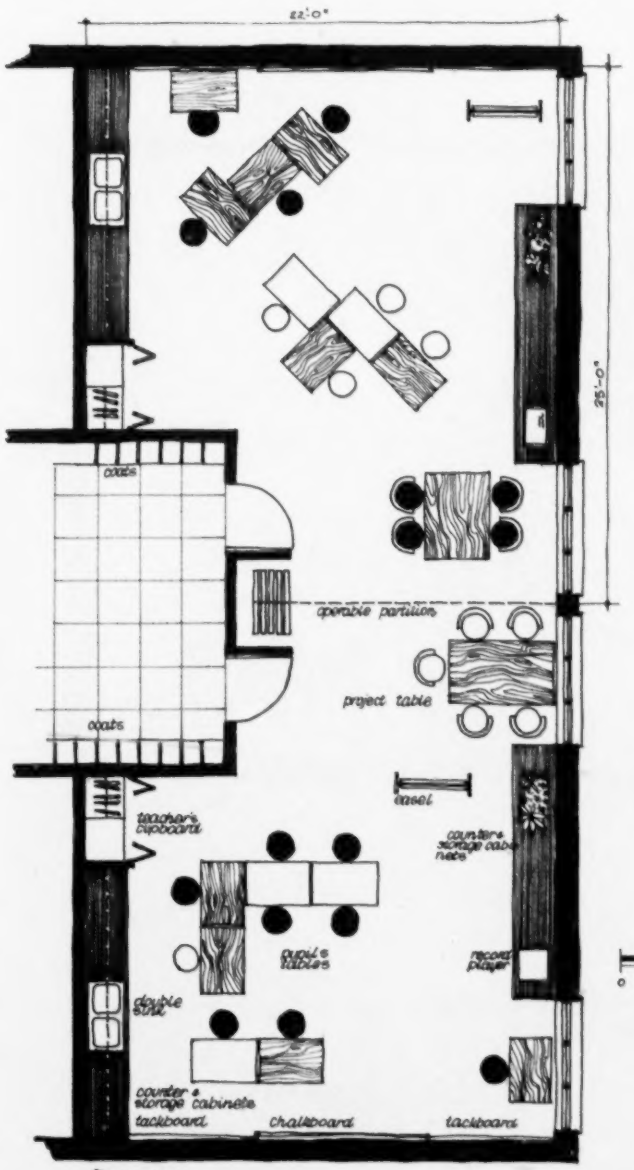
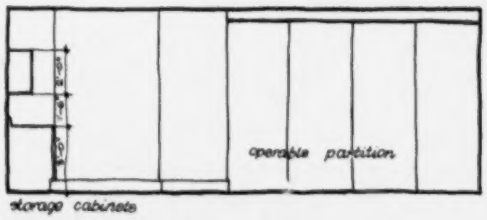


floor plan

elevation orientation



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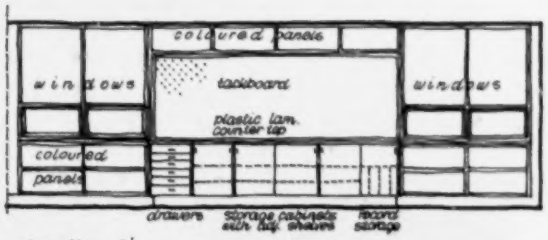

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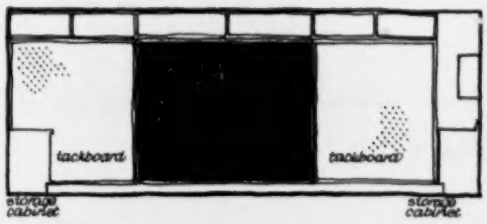

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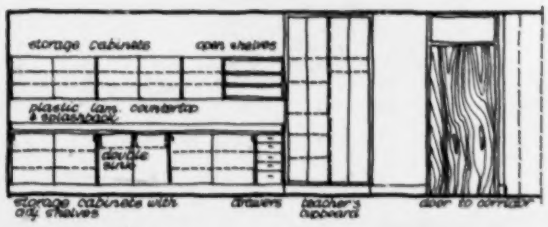
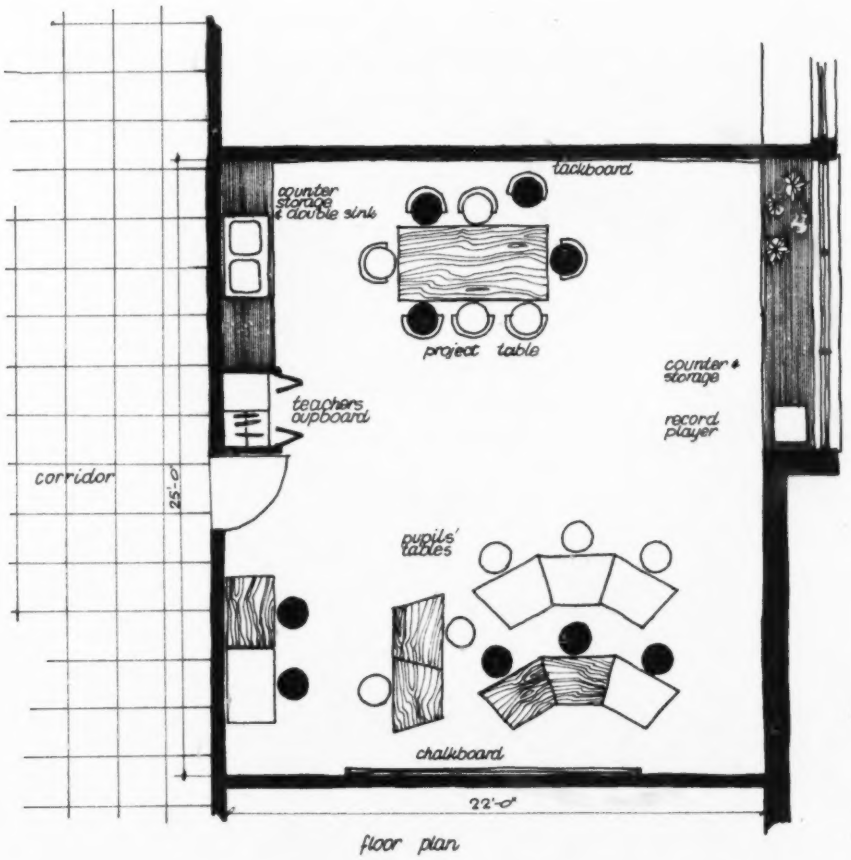


elevation 'd'

classroom arrangement for senior age group 15-18 years



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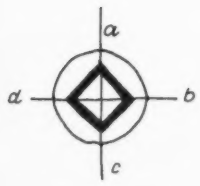
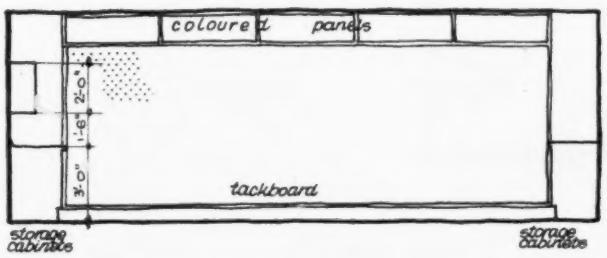


elevation orientation



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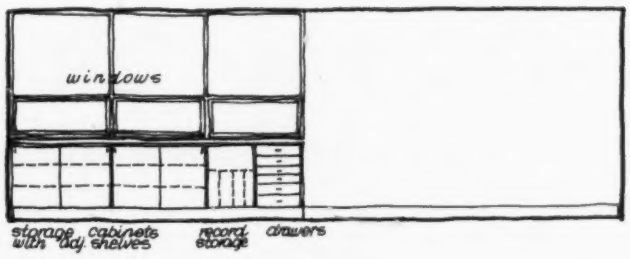

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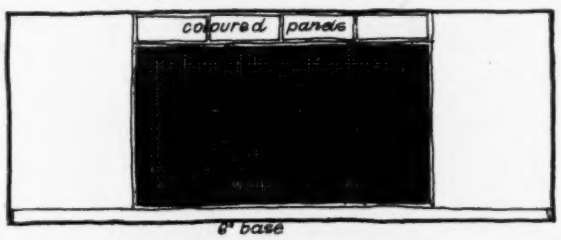

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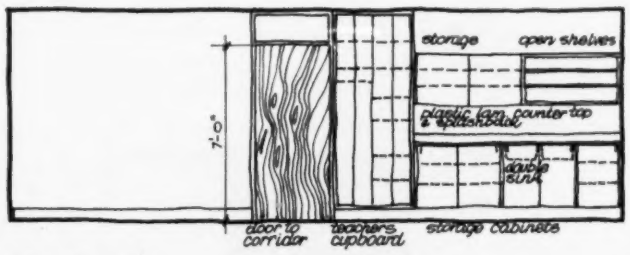

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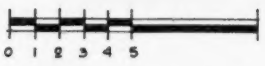
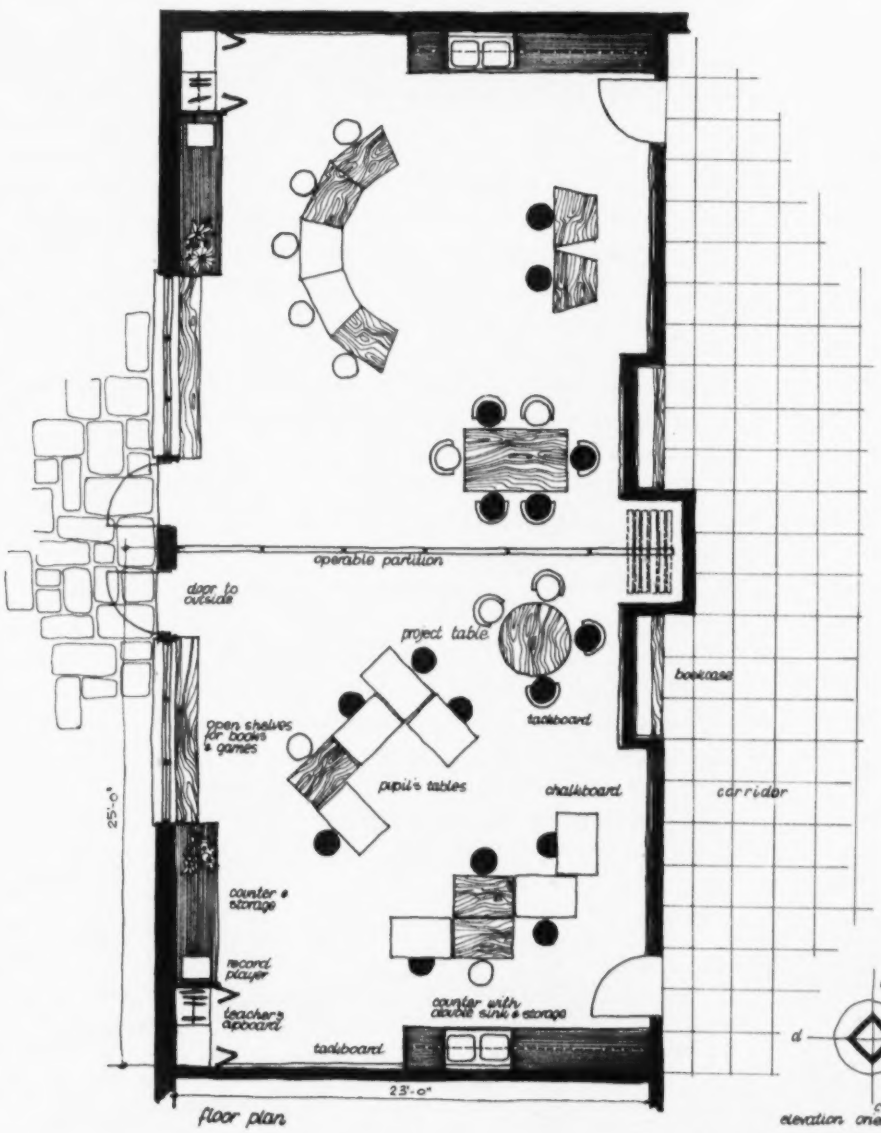
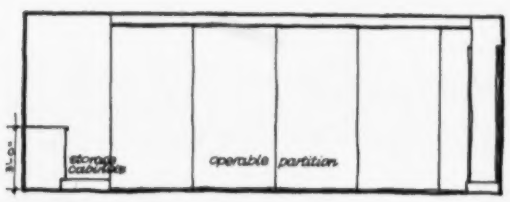
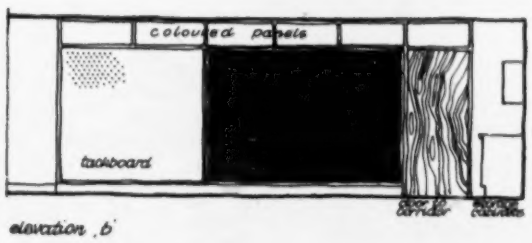
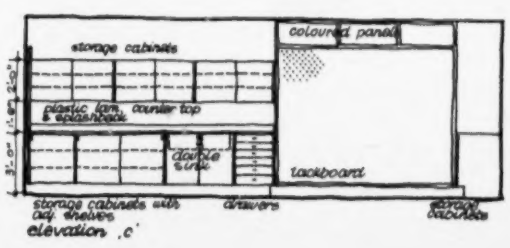
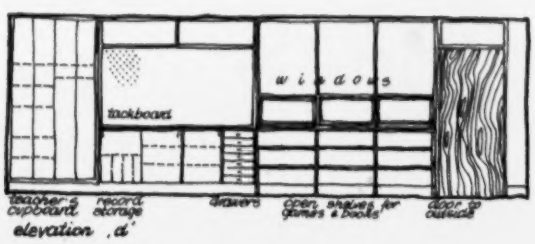



operable partition
door to outside
project table
bookcase
tackboard
open shelves for books & games
pupil's tables
chalkboard
corridor
counter & storage
record player
teacher's cupboard
counter with double sink & storage
tackboard
25'-0"
23'-0"
floor plan
a
b
c
d
elevation orientation
0 1 2 3 4 5


storage cabinets
operable partition
elevation 'a'


coloured panels
tackboard
door to corridor
storage cabinets
elevation 'b'


storage cabinets
coloured panels
plastic lam. & splashback
counter top
double sink
tackboard
storage cabinets with adj. shelves
drawers
storage cabinets
elevation 'c'


tackboard
windows
teacher's cupboard
record storage
drawers
open shelves for games & books
door to outside
elevation 'd'

Washroom facilities

In schools for mentally handicapped children washrooms are planned for training in toilet routines and grooming. Separate washrooms for boys and girls should be located conveniently to the classroom. With a limited number of staff members, this often makes it possible for one teacher to supervise washroom routines for both girls and boys at the same time.

Size
The washrooms should provide adequate space for training in personal routines and to allow wheelchair traffic. The actual toilet cubicles should be large enough to permit wheelchair pupils to manage by themselves. Metal grab-bars should be placed on both sides of the toilet and a rail should be placed on the cubicle wall in at least one toilet to help the children with orthopaedic problems to stand up safely and where possible to attend to toilet routines without help.

Washbasins
The washbasins with hot and cold running water should be adjusted to the pupils' size. For younger pupils lower washbasins should be installed.

Doors
Doors should have locks or hooks which are easy to open so that teachers can assist children in case of epileptic seizures. The doors should be sized for pupils in wheelchairs and be designed for easy entrance and exit to the compartment.

Shelves
Shelves should be fixed on one wall with divisions for each pupil's personal grooming articles such as: comb, toothbrush, toothpaste, tumbler, nail file and other useful personal belongings.

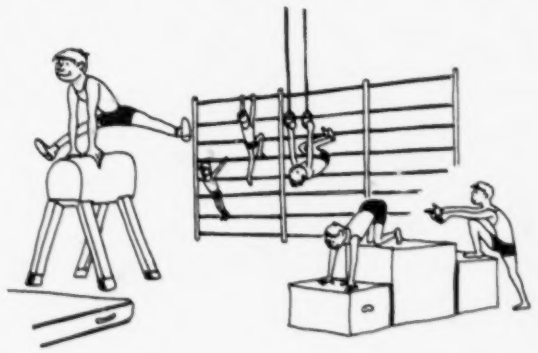
Mirror
A large full-length mirror should be placed on one wall so that children can follow their own grooming procedures.

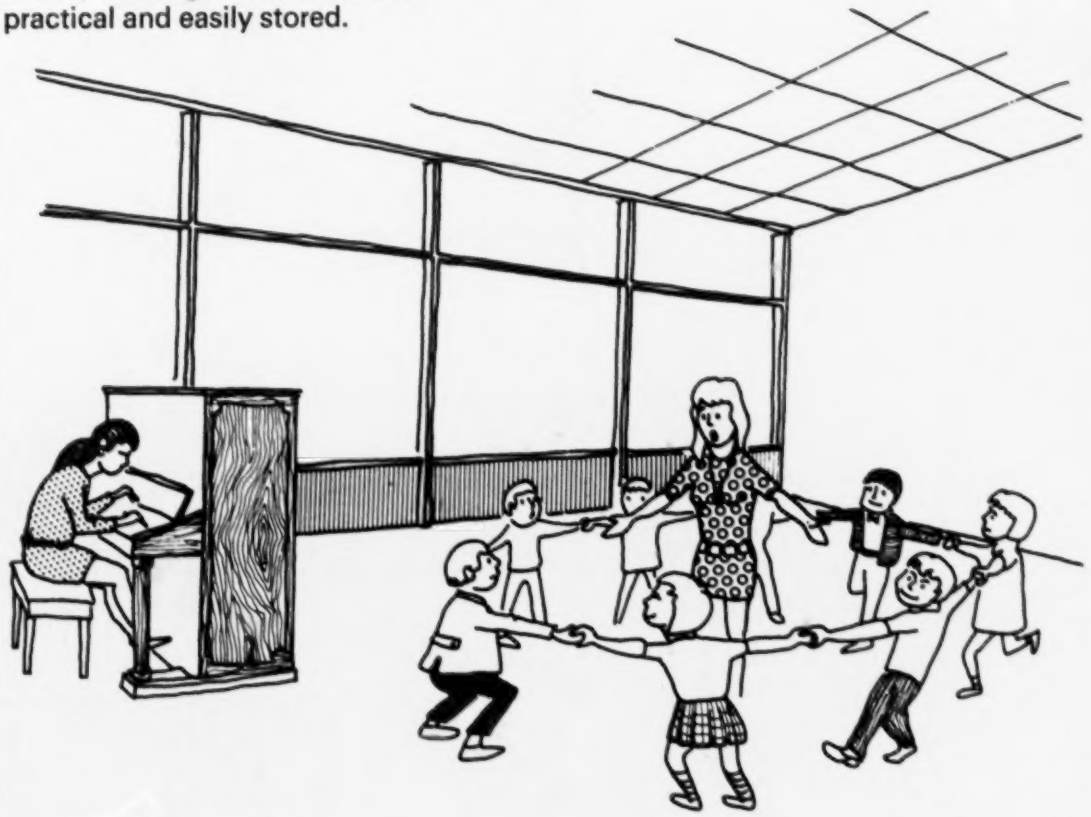
Playroom

The large playroom (gymnasium), used primarily for physical activities, school assembly, music and dancing, should be located so that it has also a direct entrance from the playground.

Size
The size depends upon the total population of the school. There should be sufficient space to accommodate all pupils at one time for certain activities such as assembly, school concerts, etc. (This may be smaller than the regular gymnasium of an elementary school.) A small stage could be included for such activities as dramatization, singing, dancing and school concerts. It would be practical to use the space below the stage for the storage of movable equipment. Alternatively, a small storage room may be provided close to the playground door for movable equipment which could be used for indoor and outdoor activities. In some schools the playroom might also be used for lunch-time activities. Movable tables or folding tables, fixed against one wall are practical and easily stored.

Equipment
Equipment should include: climbing apparatus, balance benches (standard size), walking board (1 x 12 inches wide, board of any length), climbing rope (optional), tumbling mats (5 x 8 feet or six individual mats), four agility boxes, small equipment; also a piano, piano bench and record player.





The kitchen—classroom

In addition to the classrooms a large room equipped with modern kitchen facilities is desirable in schools for mentally handicapped children. This room should resemble the kitchen in the child's own home. It should not be a home economics classroom with elaborate appliances but an ordinary kitchen set-up, intended to teach the child to perform simple household tasks. Teaching the trainable mentally handicapped child practical skills of everyday life is essential, when he or she is capable of learning these skills and using them at home.

The older boys and girls would be able to follow these training procedures on a regular basis. Younger pupils would use the kitchen for training in safety and language development by learning a functional vocabulary.

Equipment
Household equipment used in the training of practical skills in kitchen activities should relate to home arrangements with which the child is acquainted and include:

Double sink with counter space, regular kitchen cupboards, refrigerator, stove, dishes, cooking utensils, clock, broom, dusters, furniture polish, detergents, sponge, tea towels, etc., iron and ironing board, radio.

Besides the regular kitchen facilities and equipment, a dining-room table and chairs should be provided for meaningful training in table-setting and table manners.

Craft room

A large room with craft tools and simple woodworking materials should be provided for giving pre-vocational training in practical skills and good work-habits in preparing the older pupils for sheltered workshop programs in the community. This training helps pupils to use their leisure time at home more meaningfully.

This room should be equipped with a workbench and a long table and with simple tools. These are part of the working set-up which the child will meet in the sheltered workshop situation. Most boys and girls after they finish school will probably attend and seek employment in one of the sheltered workshops or community adult programs for the mentally handicapped.

Equipment
Cupboards (to store tools, craft and cleaning materials)
Tool rack (a pegboard for display of tools)
Tackboard (for display of finished articles or procedure charts)
Double sink with generous counter space
A workbench (adult size)
A long, sturdy table (for craft activities or pre-vocational training in sorting, stapling, assembling, sewing, etc.)
Hand tools (for twelve pupils)
Cleaning up equipment (e.g. brooms, dusters, detergents, dust pan).

Principal's office

The principal's office should be centrally located in the school. If possible, it should be adjacent to the senior classroom so that the principal can teach the senior group and still be within convenient distance to the telephone. The principal's office should also be used for parent interviews and conferences.

Staff and health room

The staff room should also be used as a health room where the school nurse may examine individual children during school hours. The staff room should be attractively and comfortably furnished —suitable for teachers to use for conferences, to prepare instructional materials or to relax.

Equipment
Cupboards and shelves (for storage of reference materials and supplies as well as individual cupboards for teachers' and nurses' personal materials).
Large table (for conferences as well as a working area for teachers).
Bulletin board (for a display of educational and school information, charts, timetables and current articles of interest to teachers).
A folding bed or couch (for emergency use in case of accidents as well as for training older pupils in bed making).

Playgrounds in schools for trainable mentally handicapped children

Planning outdoor areas
An outdoor activity area for retarded children should be designed as a garden-playground rather than a large, empty playfield. It should be a place where the child can work and play—a place of interest where he can explore slopes, hollows, trees and flower beds. There should be materials like sand, water, clay and pebbles, and equipment for climbing, pushing and swinging—anything to stimulate the mentally handicapped child to action.

A wire fence is desirable to prevent the mentally handicapped child from wandering away from the playground. Less supervision is required in a fenced playground. The number of teachers supervising outdoor play, however, will depend on the number of pupils and their age level.

Variety in the lay-out of areas and the arrangement of equipment is important. It should take into consideration the safety and supervision of pupils. Excessively large and empty spaces only lead to aimless running and are difficult to supervise. On the other hand, a small playground with too much equipment scattered around will only confuse the retarded child.

In planning a playground, three main areas are suggested to make the playground interesting to mentally handicapped children and be of educational value to them.

- Hard-top area
- Grass-play area
- A garden area

The areas should not be divided rigidly but arranged into an attractive setting as a whole unit.

(i) Hard-top area
This area should be connected directly to the playroom (gymnasium) and washrooms. It should be large enough for two or three classes of children to play there when the grass is wet, or in winter when the snow can be easily removed from it.

The best surface for this area is some form of concrete or paved finish which is smooth without being slippery. Asphalt is the safest and most satisfactory. An asphalt "runway" can be extended for this area along the edge of the grass area for tricycle riding or wagon pulling. An asphalt ramp leading directly from the classroom door should also be provided for children in wheelchairs. A long bar should be fixed to the school wall to help the physically handicapped children walk unaided. A drinking fountain installed close to the playroom is also a good idea.

One part of this area could be marked for hop-scotch and for shuffle-board games for the older pupils. They could also use it for dancing, skipping, and various games in the afternoon program. Free play with movable equipment for younger pupils and physical education activities for individual classes could be performed on the asphalt section all year round. Included in free play equipment could be a portable waterplay-tub on casters, or a portable sandbox, which could easily be wheeled about and used for indoor and outdoor play activities. The equipment provided would naturally depend on the age-group of the pupils. The teacher should select and arrange the equipment so that it is challenging to each age group playing outside.

The school storage room with an extra door leading outside could be combined for outdoor and indoor equipment. This would help train the children in tidiness, by having them place the equipment in the storage room after use.

(ii) Grass play area
This area should be large enough for at least half the children of the school to play in. What they want and need is grass-space where they can play simplified versions of ball games in small groups and enjoy outdoor play with other children on their own level. As there is no need to keep this area only for ball games, part of it could be banked to add variety to the activities and enjoyment in outdoor play. In summer they could climb the "hill" and in winter use it for tobogganing.

Steps
A few shallow steps connected to a walking platform with a hand-railing is a useful arrangement for physically handicapped children. Steps can often be combined with a sand-pit or platform for jumping. A broad jump-pit could be included for those capable of high jumps.

Climbing apparatus
Some type of climbing apparatus placed permanently in the grass-section is useful for all the children. It should be placed away from the open play area, so children can experiment on the equipment safely.

Trees
Trees planted in a cluster for shade over the sandbox, or where the children might sit for story telling, puppet shows, dramatizations and other activities, would add to the amenities of the playground.

(iii) Garden area
A small area where children can plant flowers and vegetables, tend them and watch them grow is advisable. This area may in part be used for pets, or for a small fish pond. It should be an interesting area with natural slopes and hollows for younger children to dig in and where the older children can make flower beds or rock gardens.

The lay-out should be informal, attractive and workable with a bird-house in the trees or on a pole. A bird-bath could be put in this area, too.

Playground equipment

The selection of the right type of equipment for mentally handicapped children is most important in the planning of a playground. It is not the amount of equipment in the playground but the suitability and arrangement which have to be considered. The equipment should be challenging to the mentally handicapped child, stimulating him to action involving his whole body —climbing, swinging, pulling, pushing, crawling, etc.

It is important to see that the equipment used by mentally handicapped children is of sound construction without rough edges and is safely and correctly installed. Each piece of equipment should be in good condition. The child must feel secure in using it before he can gain satisfaction from it. The equipment should be placed near the school building for closer supervision, and if possible, in corners of the grass-area, leaving the middle part free for ball games. The arrangement of sets or groups of two or three pieces of equipment is more interesting and challenging to the children than having the equipment scattered all over the playground.

It is important that the teacher recognize each child's need to be active. He must provide the child with opportunities to play and with interesting arrangements of equipment.

(i) Large stationary equipment
Climbing apparatus. ("London Bridge", Teepee or climbing bars)
Swings (with box-seats, rings, bar, or swinging rope)
Slides (junior size)

There should be at least one large piece of equipment in every playground for the strenuous activities conducive to physical development.

A large climbing frame
A large climbing frame constructed from steel tubes is very helpful and interesting for the young mentally handicapped as well as for the older children.

Rubber tires
Children can gain experience in crawling by playing with rubber tires or barrels embedded in cement. Two or three tires or barrels painted in bright colours would add variety to the playground equipment.

Swings
Swings must be firmly installed and safely situated in an area not involved with other equipment in order to prevent children from getting hurt. (Close supervision is required.) Most mentally handicapped children enjoy swings. A box-seat swing is recommended for the younger mentally handicapped children. For older pupils two rings or an adjustable bar will add new interest and motivate the adolescent to use the swings according to his needs. Activities such as hanging and stretching are very helpful in the physical development of the mentally handicapped young adolescent.

Slides
A junior-size slide firmly installed will be sufficient for all age levels. Groups of two or three children using the slide at one time is much more enjoyable.

(ii) Movable equipment
An adequate amount of movable equipment should be available on the playground, such as wagons, tricycles, doll carriages, walking boards, blocks, etc., to stimulate individual and group activities.

(iii) Small equipment
Balls, skipping ropes, and hoops, etc. are always popular with every child and should be made readily available.

Not all the equipment should be used at once, as this can be confusing to the children. They will enjoy playing with equipment if it is presented gradually.